

WHAT IS CLAIMED IS:

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Sub 1
C1 1. A decoy deployment and retrieval system for a decoy tethered by a towing cable, comprising:

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8A a canister for housing and deploying said decoy, said canister including an extensible boom 40
89 having a cradle for capturing said decoy upon retrieval and translatable from a stowed position to a decoy retrieval position;

36 a winch located in said canister for reeling in a deployed decoy by its towing cable for capture by said cradle; and,

an actuator for extending said boom during retrieval and for withdrawing said boom to said stowed position after capture of said deployed decoy, whereby said decoy is restored for redeployment within said canister.

103W 2. The system of Claim 1, wherein said winch includes a level winding winching system.

103W 3. The system of Claim 1, wherein said towing cable includes a fiber optic cable.

103W 2 4. The system of Claim 3, and further including a fiber optic rotary coupler adjacent said winch, said coupler having one portion thereof coupled to an end of said fiber optic cable and rotatable with said winch, and another portion fixed to said canister such that signals may be placed on and received from said fiber optic cable from said canister.

103W 5. The system of Claim 1, wherein said decoy includes a traveling wave tube and wherein said towing cable includes at least one high voltage line for powering said traveling wave tube.

6. The system of Claim 5, and further including a high voltage slip ring assembly adjacent said winch and having the ring thereof rotatable with said winch and coupled to said high voltage line and another ring thereof fixed to said canister.

7. The system of Claim 1, wherein said towing cable runs over said boom and further including a load sensor in said boom and in contact with said cable for detecting the load thereon.

8. The system of Claim 7 wherein said winch includes a motor and a control unit coupled thereto, and further including means for coupling said load sensor to said control unit, said control unit controlling the winching speed of said winch so as to keep the load on said cable below a predetermined maximum to prevent damage to said cable.

9. The system of Claim 7, and further including a tension indicator coupled to said load sensor and an indicator actuator for activating said indicator when the tension sensed by said load sensor is above a predetermined threshold.

10. A decoy deployment and retrieval system for a decoy tethered by a towing cable, comprising:

a canister for housing and deploying said decoy;

11) a level winding winching system having a spindle about which said cable is wrapped; and,

a drive coupled to said spindle for actuating said winch for paying out said cable during decoy deployment and for reeling in said decoy during retrieval, said level winding winching

system operative to pay out line at a controlled rate and for reeling in said line in a backlash free manner so as not to destroy said cable.

11. The system of Claim 10, wherein said winching system includes a motor and a control therefor, and further including a load sensor in contact with said cable and coupled to said control such that tension sensed by said load cell is used in the control of the speed of said motor.

12. The system of Claim 10, wherein said cable includes a fiber optic cable and further including a fiber optic rotary coupling at said winch, one portion of said rotary coupling coupled to said fiber optic cable and another portion of said rotary coupling coupled to said canister, whereby line fouling is avoided during winch operation.

13. The system of Claim 10, wherein said cable includes at least one line carrying a high voltage and further including a high voltage slip ring assembly at said winch having one ring thereof coupled to the line carrying said high voltage and another ring fixed to said canister, whereby line fouling is avoided during winch operation.

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